

TOWN OF WINDSOR

ORDINANCE NO. 2020-1609

AN ORDINANCE ADDING ARTICLE VI, CHAPTER 13 TO THE WINDSOR MUNICIPAL CODE CONCERNING BACKFLOW PREVENTION AND CROSS-CONNECTION CONTROLS WITHIN THE TOWN OF WINDSOR, COLORADO

WHEREAS, the Town of Windsor (“Town”) is a home rule municipality with all powers conferred under Colorado law; and

WHEREAS, pursuant to Article II, Chapter 13 of the *Windsor Municipal Code* (“*WMC*”), the Town is responsible for the management, care and operation of the water works of the Town within its corporate limits; and

WHEREAS, the Town is required to protect the public water system from contaminants or pollutants that could enter the distribution system by backflow from a customer’s water supply system through the service connection; and

WHEREAS, Section 39 of 5 CCR 1002-11, *Colorado Primary Drinking Water Regulations* (“*Regulations*”), sets forth standards and rules adopted by the Water Quality Control Commission, that applies to the Town’s public water system; and

WHEREAS, the Town has adopted the *International Plumbing Code* in Article VI, Chapter 18 of the *WMC*; and

WHEREAS, failure to follow these *Regulations* could result in civil or criminal actions pursuant to sections 25-1-114 and 25-1-114.1, *Colorado Revised Statutes*, (“*CRS*”); and

WHEREAS, the Town desires to implement and enforce the required rules and regulations pursuant to the above-mentioned Regulations and Statutes; and

WHEREAS, the Water and Sewer Board reviewed this ordinance on May 13, 2020 and recommends its adoption; and

WHEREAS, the Town Board has concluded that adoption of this Ordinance promotes the public health, safety and welfare.

NOW, THEREFORE, BE IT ORDAINED BY THE TOWN BOARD OF THE TOWN OF WINDSOR, COLORADO, AS FOLLOWS:

Section 1. Chapter 13 of the *Windsor Municipal Code* shall be amended by the addition of a new Article VI, which shall read as follows:

ARTICLE VI
BACKFLOW PREVENTION AND CROSS-CONNECTION CONTROL

Sec. 13-6-10 – Intent.

The intent of this Article is to protect the public water system from contaminants or pollutants that could enter the distribution system by backflow from a customer's water supply system through the service connection, as regulated by federal and state law, in order to protect the drinking water supplied through the Town's water utility. The objectives of this Article are:

- (a) To authorize the survey of all service connections within the distribution system to determine if the connection is a cross-connection;
- (b) To authorize control over all service connections within the distribution system if the connection is a cross-connection;
- (c) To authorize control of any service connections within the distribution system in lieu of a survey as long as the service connection is controlled with an air gap or reduced pressure zone backflow prevention assembly;
- (d) To authorize the collection of fees for the administration of this program;
- (e) To require the Town to maintain records of cross-connection surveys and the installation, testing and repair of all backflow prevention assemblies installed for containment and containment by isolation purposes.

Except as otherwise provided herein, the Water Department of the Town shall administer, implement and enforce the provisions of this Ordinance.

Sec. 13-6-20. Applicability.

This Article applies to all commercial, industrial, and multi-family residential service connections, and irrigation connections using potable water, within the public water system and to any persons outside the Town who are, by contract or agreement with the public water system, users of the public water system. This Article does not apply to single-family-residential service connections unless the public water system becomes aware of a cross-connection at the single-family connection.

Sec. 13-6-30. Definitions.

- a. *Active Date* means the first day that a backflow prevention assembly or backflow prevention method is used to control a cross-connection in each calendar year.

- b. *Air Gap* is a physical separation between the free-flowing discharge end of a potable water supply pipeline and an open or non-pressure receiving vessel installed in accordance with standard ASME A112.1.2.
- c. *Backflow* means the undesirable reversal of flow of water or mixtures of water and other liquids, gases or other substances into the public water systems distribution system from any source or sources other than its intended source.
- d. *Backflow Contamination Event* means backflow into a public water system from an uncontrolled cross-connection such that the water quality no longer meets the Colorado Primary Drinking Water Regulations or presents an immediate health and/or safety risk to the public.
- e. *Backflow Prevention Assembly* means any mechanical assembly installed at a water service line or at a plumbing fixture to prevent a backflow contamination event, provided that the mechanical assembly is appropriate for the identified contaminant at the cross-connection and is an in-line field-testable assembly.
- f. *Backflow Prevention Method* means any method and/or non-testable device installed at a water service line or at a plumbing fixture to prevent a backflow contamination event, provided that the method or non-testable device is appropriate for the identified contaminant at the cross-connection.
- g. *Certified Cross-Connection Control Technician* means a person who possesses a valid Backflow Prevention Assembly Tester certification from one of the following approved organizations: American Society of Sanitary Engineering (ASSE) or the American Backflow Prevention Association (ABPA). If a certification has expired, the certification is invalid.
- h. *Colorado Department of Health cross-connection control manual* means a manual that has been published by the State addressing cross-connection control practices which shall be used as a guidance document for implementing a cross-connection control program.
- i. *Containment* means the installation of a backflow prevention assembly or a backflow prevention method at any connection to the public water system that supplies an auxiliary water system, location, facility, or area such that backflow from a cross-connection into the public water system is prevented.
- j. *Containment by Isolation* means the installation of backflow prevention assemblies or backflow prevention methods at all cross-connections identified within a customer's water system such that backflow from a cross-connection into the public water system is prevented.

k. *Controlled* means having a properly installed, maintained, and tested or inspected backflow prevention assembly or backflow prevention method that prevents backflow through a cross-connection.

l. *Cross-Connection* means any connection that could allow any water, fluid, or gas such that the water quality could present an unacceptable health and/or safety risk to the public, to flow from any pipe, plumbing fixture, or a customer's water system into a public water system's distribution system or any other part of the public water system through backflow.

m. *Multi-Family* means a single residential connection to the public water system's distribution system from which two or more separate dwelling units are supplied water.

n. *Operator in Responsible Charge* means a certified operator who is designated by the owner of the water or wastewater facility and has supervisory responsibility for the operation of the facility and for the operational activities and functions of other facility operators.

o. *Single-Family* means:

- i. A single dwelling which is occupied by a single family and is supplied by a separate service line; or
- ii. A single dwelling comprised of multiple living units where each living unit is supplied by a separate service line.

p. *Uncontrolled* means not having a properly installed and maintained and tested or inspected backflow prevention assembly or backflow prevention method, or the backflow prevention assembly or backflow prevention method does not prevent backflow through a cross-connection.

q. *Water Supply System* means a water distribution system, piping, connection fittings, valves and appurtenances within a building, structure, or premises. Water supply systems are also referred to commonly as premise plumbing systems.

Sec. 13-6-40. Unprotected cross-connection prohibited.

It shall be unlawful to make, install, maintain or permit any cross-connection with the water system without providing protection against backflow by proper installation and maintenance of an approved backflow prevention device to insure that it is in proper working order.

Sec. 13-6-50. Requirements.

- a. Commercial, industrial and multi-family service connections, and any irrigation connections utilizing potable water, shall be subject to a survey for cross-connections. If a cross-connection has been identified an appropriate backflow

prevention assembly and or method shall be installed at the customer's water service connection within 120 days of its discovery. The assembly shall be installed downstream of the water meter or as close to that location as deemed practical by the public water system. If the assembly or method cannot be installed within 120 days the public water system must affirmatively act to control or remove the cross-connection, suspended service to the cross-connection or receive an alternative compliance schedule from the Colorado Department of Public Health and Environment.

- b. Any backflow prevention device required shall be of a model and size approved by the Operator in Responsible Charge, and meet the standards for approval pursuant to the American Water Works Association (AWWA), the American Society of Sanitary Engineering and the Foundation of Cross-Connection Control and Hydraulic Research (FCC & HR) of the University of Southern California in their present form and as may be amended from time to time. Any backflow prevention devices not subject to the approval of the above-listed laboratories (in-line dual checks, atmospheric vacuum breakers or hose bibb vacuum breakers) shall have full approval by appropriate organizations such as the American Society of Sanitary Engineering, International Association of Plumbing and Mechanical Officials or Los Angeles Mechanical Laboratory.
- c. The backflow prevention device shall be installed after the water meter. There shall be no connections or tees between the meter and the containment backflow prevention assembly.
 - i. In instances where a reduced pressure principle backflow preventer cannot be installed, the customer and/or property owner, at owner's expense, must install approved backflow prevention devices or methods at all cross-connections within the owner's plumbing system.
- d. Backflow prevention assemblies and methods shall be installed in a location which provides access for maintenance, testing and repair, preferably at or near the property line or immediately inside the structure being served before the first branch line leading off the water service line.
- e. Reduced pressure principle backflow preventers shall not be installed in a manner subject to flooding.
- f. Provisions shall be made to provide adequate drainage from the discharge of water from reduced pressure principle backflow prevention assemblies. Such discharge shall be conveyed in a manner which does not impact waters of the State.
- g. All assemblies and methods shall be protected to prevent freezing. Those assemblies and methods used for seasonal services may be removed in lieu of

being protected from freezing. The assemblies and methods must be reinstalled and then tested by a certified cross-connection control technician upon reinstallation.

- h. Where a backflow prevention assembly or method is installed on a water supply system using storage water heating equipment such that thermal expansion causes an increase in pressure, a device for controlling pressure shall be installed.
- i. All backflow prevention assemblies shall be tested at the time of installation and on an annual schedule thereafter. Such tests must be conducted by a Certified Cross-Connection Control Technician. All test reports shall be sent to the Town within 30 days of test completion.
- j. The public water system shall require inspection, testing, maintenance and as needed repairs and replacement of all backflow prevention assemblies and methods, and of all required installations within the owner's plumbing system in the cases where containment assemblies and or methods cannot be installed.
- k. All costs for design, installation, maintenance, testing and as needed repair and replacement are to be borne by the customer and/or property owner.
- l. No grandfather clauses exist except for fire sprinkler systems where the installation of a backflow prevention assembly or method will compromise the integrity of the fire sprinkler system.
- m. For new buildings, all building plans must be submitted to the public water system and approved prior to the issuance of water service. Building plans must show:
 - 1. Water service type, size and location;
 - 2. Meter size and location;
 - 3. Backflow prevention assembly size, type and location;
 - 4. Fire sprinkler system(s) service line, size and type of backflow prevention assembly.
 - i. All fire sprinkling lines shall have a minimum protection of an approved double check valve assembly for containment of the system.
 - ii. All glycol (ethylene or propylene), or antifreeze systems shall have an approved reduced pressure principle backflow preventer for containment.
 - iii. Dry fire systems shall have an approved double check valve assembly installed upstream of the air pressure valve.

- iv. In cases where the installation of a backflow prevention assembly or method will compromise the integrity of the fire sprinkler system the public water system can chose to not require the backflow protection. The public water system will measure chlorine residual at location representative of the service connection once a month and perform periodic bacteriological testing at the site. If the public water system suspects water quality issues the public water system will evaluate the practicability of requiring that the fire sprinkler system be flushed periodically.

Sec. 13-6-60. Required types of backflow prevention devices.

(a) In the case of any premises where there is an auxiliary water supply, as stated in preceding paragraphs of this Article and it is not subject to any of the following rules, the Town's water system shall be protected by an approved air-gap separation or an approved reduced pressure principal backflow prevention device.

(b) In the case of any premises where there is water or a substance that would be objectionable but not hazardous to health, if introduced into the public water system, the Town's water system shall be protected by an approved double check valve assembly.

(c) In the case of any premises where there is any material dangerous to health which is handled in such a fashion as to create an actual or potential hazard to the Town's water system, the water system shall be protected by an approved air-gap separation or an approved reduced pressure principal backflow prevention device. Examples of premises where these conditions will exist include sewage treatment plants, sewage pumping stations, chemical manufacturing plants, hospitals, mortuaries and plating plants.

(d) In the case of any premises where there are "uncontrolled" cross-connections, either actual or potential, the public water system shall be protected by an approved air-gap separation or an approved reduced pressure principal backflow prevention device at the service connection.

(e) In the case of any premises where, because of security requirements or other prohibitions or restrictions, it is impossible or impractical to make a complete in-plant cross-connection survey, the public water system shall be protected against backflow or back-siphonage from the premises by the installation of a backflow prevention device in the service line. In this case, maximum protection will be required; that is, an approved reduced pressure principal backflow prevention device shall be installed in each service to the premises.

(f) The following guidelines relating to backflow prevention devices for irrigation systems shall apply:

- (1) Atmospheric vacuum breakers shall be installed after the last control valve of each sprinkler circuit and at a minimum of six (6) inches above the highest irrigation circuits with heads that will not return any pressure in the circuit when the circuit control valve is closed.
 - (2) Pressure vacuum breakers shall be installed at the beginning of each irrigation circuit and at a minimum of twelve (12) inches above the highest irrigation head on the circuit. Individual irrigation circuits having quick coupling valves or other similar typeheads that will permit pressure to be retained in the circuit shall have a pressure vacuum breaker installed as a minimum requirement for each circuit. Irrigation systems using the subsurface drip method shall have a pressure vacuum breaker on each circuit. A pressure vacuum breaker may not be installed where a double check valve assembly, reduced pressure principal backflow prevention device or air-gap separation is required.
 - (3) A double check valve assembly may be installed to serve multiple irrigation circuits in lieu of vacuum breakers on each individual irrigation circuit.
 - (4) Reduced pressure principal backflow device or air-gap separation shall be required before any piping network in which fertilizers, pesticides and other chemical or toxic contaminants are injected or siphoned into the irrigation system.
- (g) Water systems for fighting fire, derived from a supply that cannot be approved as safe or potable for human use, shall be kept wholly separate from drinking water pipelines and equipment. In cases where the domestic water system is used for both drinking and fire-fighting purposes, approved backflow prevention devices shall be installed to protect such individual drinking water lines as are not used for fire-fighting purposes.
- (h) The use of a Town fire hydrant shall only be done with the approval of the Operator in Responsible Charge. Any time water is taken out of a fire hydrant for the purpose of filling a tank or container, this will require the use of an air-gap or an approved reduced pressure principal backflow prevention device, which will be installed on the line connection the fire hydrant.

Sec. 13-6-70. Premises requiring backflow prevention devices.

- (a) Auxiliary water supply: In the case of premises having an auxiliary water supply which is not or may not be safe of bacteriological, radiological or chemical quality and which is not acceptable as an additional source by the Operator in Responsible Charge, the Town's water system shall be protected by an approved backflow prevention device in the service line appropriate to the degree of hazard.
- (b) Industrial fluids: In the case of premises on which any industrial fluids or any other objectionable substance is handled in such a fashion as to create an actual or potential hazard to the Town's water system, the Town's system shall be protected against backflow from the premises by an approved backflow prevention device in the water

service line appropriate to the degree of hazard. This shall include the handling of process waters and waters originating from the Town's water system which have been subject to deterioration in quality.

(c) Internal cross-connections:

- (1) In the case of premises having internal cross-connections that cannot be permanently corrected and controlled;
- (2) Intricate plumbing and piping arrangements;
- (3) Where entry to all portions of the premises is not readily accessible for inspection purposes, making it impracticable or impossible to ascertain whether or not dangerous cross-connections exist.

Sec. 13-6-80. Inspection, Testing and Repair.

- a. Backflow prevention assemblies or methods shall be tested by a Certified Cross-Connection Control Technician upon installation and tested at least annually, thereafter. The tests shall be made at the expense of the customer and/or property owner.
 - i. Any backflow prevention assemblies or methods that are non-testable, shall be inspected at least once annually by a certified cross-connection control technician. The inspections shall be made at the expense of the customer and/or property owner.
- b. As necessary, backflow prevention assemblies or methods shall be repaired and retested or replaced and tested at the expense of the customer and/or property owner whenever the assemblies or methods are found to be defective.
- c. Testing gauges shall be tested and calibrated for accuracy at least once annually.

Sec. 13-6-90. Reporting and Recordkeeping.

- a. Copies of records of test reports, repairs and retests, or replacements shall be kept by the customer and/or property owner for a minimum of three (3) years.
- b. Copies of records of test reports, repairs and retests shall be submitted to the public water system by mail, facsimile or e-mail by the testing company or testing technician.
- c. Information on test reports shall include, but may not be limited to,
 - i. Assembly or method type
 - ii. Assembly or method location
 - iii. Assembly make, model and serial number

- iv. Assembly size
- v. Test date; and
- vi. Test results including all results that would justify a pass or fail outcome
- vii. Certified cross-connection control technician certification agency
- viii. Technician's certification number
- ix. Technician's certification expiration date
- x. Test kit manufacturer, model and serial number
- xi. Test kit calibration date

Sec. 13-6-100. Right of entry.

A properly credentialed representative of the Town shall have the right of entry to survey, inspect, and enter into and upon, any and all buildings and premises, for the presence of cross-connections for possible contamination risk and for determining compliance with this section. This right of entry shall be a condition of water service in order to protect the health, safety and welfare of customers throughout the public water system's distribution system.

Sec. 13-6-110. Compliance.

- a. Customers and/or property owners shall cooperate with the installation, inspection, testing, maintenance, and as needed repair and replacement of backflow prevention assemblies and with the survey process. For any identified uncontrolled cross-connections, the public water system shall complete one of the following actions within 120 days of its discovery:
 - i. Control the cross-connection
 - ii. Remove the cross-connection
 - iii. Suspend service to the cross-connection
- b. The public water system shall give notice in writing to any owner whose plumbing system has been found to present a risk to the public water system's distribution system through an uncontrolled cross-connection. The notice and order shall state that the customer and/or property owner must install a backflow prevention assembly or method at each service connection to the owner's premises to contain the water service. The notice and order will give a date by which the customer and/or property owner must comply.
 - i. In instances where a backflow prevention assembly or method cannot be installed, the customer and/or property owner must install approved backflow prevention assemblies or methods at all cross-connections within the owner's water supply system. The notice and order will give a date by which the customer and/or property owner must comply.

Sec. 13-6-120. Violations and Penalties.

Any violation of the provisions of this Article, shall, upon conviction be punishable as provided in all applicable statutes, laws, and regulations, including, but not limited to those provided in Chapter 1, Article IV of the *Windsor Municipal Code*.

Sec. 13-6-130. Conflict with other codes.

If a dispute or conflict arises between the *International Plumbing Code* as adopted herein, and any plumbing, mechanical, building, electrical, fire or other code adopted by the State, then the most stringent provisions of each respective code shall prevail.

Section 1. *Windsor Municipal Code* Section 13-2-20 – Definitions, shall be amended by the repeal and deletion of the following Definitions:

Air Gap – delete.

Approved backflow prevention device – delete.

Backflow – delete.

Backflow prevention device – delete.

Certified cross connection control device technician – delete.

Colorado Department of Health cross-connection control manual – delete.

Containment, protection by – delete.

Contamination – delete.

Critical level – delete.

Cross-connection – delete.

Cross-connection, controlled – delete.

Double check valve assembly – delete.

Isolation – delete.

Section 2. *Windsor Municipal Code* Section 13-2-330 shall be repealed in its entirety.

Section 3. *Windsor Municipal Code* Section 13-2-340 shall be repealed in its entirety.

Section 4. *Windsor Municipal Code* Section 13-2-350 shall be repealed in its entirety.

Section 5. *Windsor Municipal Code* Section 13-2-360 shall be repealed in its entirety.

Section 6. *Windsor Municipal Code* Section 13-2-370 shall be repealed in its entirety.

Section 7. *Windsor Municipal Code* Section 13-2-380 shall be repealed in its entirety.

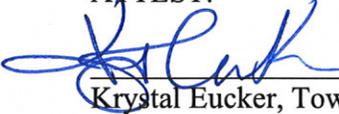
Section 8. *Windsor Municipal Code* Section 13-2-390 shall be repealed in its entirety.

Section 9. *Windsor Municipal Code* Section 13-2-400 shall be repealed in its entirety.

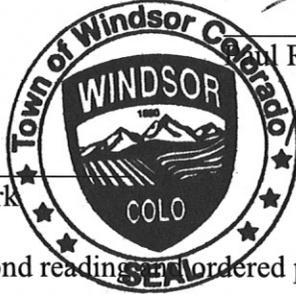
Introduced, passed on first reading and ordered published this June 8, 2020.

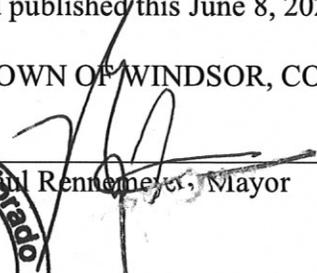
TOWN OF WINDSOR, COLORADO

ATTEST:



Krystal Eucker, Town Clerk




Paul Rennemeyer, Mayor

[Seal]

Introduced, passed on second reading and ordered published this June 22, 2020.

TOWN OF WINDSOR, COLORADO

Paul Rennemeyer, Mayor

ATTEST:

[Seal]

Krystal Eucker, Town Clerk